PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| Appellant(s): | Daniel White SEXTON et al. | |
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| Examiner: | Pawaris Sinkantarakorn | |
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| Customer No.: | 06147 | |
| Title: | HIGH PERFORMANCE NETWORK COMMUNICATION DEVICE AND METHOD | |

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## APPEAL BRIEF UNDER 37 CFR § 41.37

This Appeal Brief is filed pursuant to the Notice of Appeal filed September 4, 2009, in response to the final Official Action and Advisory Action dated June 10, 2009 and August 28, 2009, respectively, and is filed in conjunction with a Petition for Revival of an Application for Patent Abandoned Unintentionally under 37 CFR § 1.137(b).

1. ***Real Party in Interest.***

The real party in interest in this appeal is General Electric Company, which is the assignee of the above-referenced patent application.

2. ***Related Appeals and Interferences.***

There are no related appeals and/or interferences involving this application or its subject matter.

3. ***Status of Claims.***

The present application currently includes Claims 1-20, which all stand rejected. Appellant appeals the rejections of Claims 1-20.

4. ***Status of Amendments.***

There are no unentered amendments in this application.

5. ***Summary of Claimed Subject Matter.***

The claimed invention provides a bi-directional communication device, a network communication device for bi-directional communication networks, and a method of communicating messages on a bi-directional communication network. In this regard, as recited in independent claim 1, a network communication device (*e.g.*, element 10 of Fig. 2 and paragraph [0013]) for bi-directional communication networks according to an exemplary embodiment of the present invention includes a first portion (*e.g.*, element 30 of Fig. 2 and paragraph [0018]) communicably connectable to a first point (*e.g.*, elements 24 of Fig. 2 and paragraphs [0018]-[0020]) and a second point (*e.g.*, element 22 of Fig. 2 and paragraphs [0018]-[0020]) on the bi-directional communication network (*e.g.*, element 12 of Fig. 2). The first portion is configured to manage collisions among a first set of messages transmittable from the first point to the second point (paragraphs [0018]-[0022]). The network communication device also includes a second portion (*e.g.*, element 32 of Fig. 2 and paragraph [0018]) communicably connectable, in parallel with the first portion, to each of the first and second points (paragraphs [0018]-[0020]). The second portion is configured to transmit, free of collision management, a second set of messages transmittable from the second point to the first point (paragraphs [0018]-[0022]).

Independent claim 10 recites a bi-directional communication device (*e.g.*, element 10 of Fig. 2 and paragraph [0013]) including a hub portion (*e.g.*, element 32 of Fig. 2 and paragraph [0018]) and a switch portion (*e.g.*, element 30 of Fig. 2 and paragraph [0018]). A first plurality of connections (*e.g.*, elements 44 of Fig. 4 and paragraph [0026]) are configured to communicably connect the hub portion to a plurality of first points (*e.g.*, elements 24 of Fig. 4

and paragraphs [0018]-[0020] and [0026]-[0028]) on a bi-directional communication network and to a second point (*e.g.*, element 22 of Fig. 2 and paragraphs [0018]-[0020] and [0026]-[0028]) on the bi-directional communication network. A second plurality of connections (*e.g.*, elements 44 of Fig. 4 and paragraph [0026]) is configured to communicably connect the switch portion, in parallel with the hub portion, to the plurality of first points and to the second point (paragraphs [0018]-[0020] and [0026]-[0028]).

Independent claim 18 provides a method of communicating messages on a bi-directional communication network, the method including transmitting a first message from each of a plurality of first points on the bi-directional communication network to a single second point on the bi-directional communication network through a switch portion of a communication device (*e.g.*, *see* paragraphs [0018]-[0022]). A second message is transmitted from the single second point to the plurality of first points through a hub portion of the communication device that is communicatively connected to the communication network in parallel with the switch portion (*e.g.*, *see* paragraphs [0018]-[0022]).

6. ***Grounds of Rejection to be Reviewed on Appeal.***

The following grounds of rejection are appealed: Claims 1-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,953,340 to Scott *et al.* (hereinafter "*Scott*").

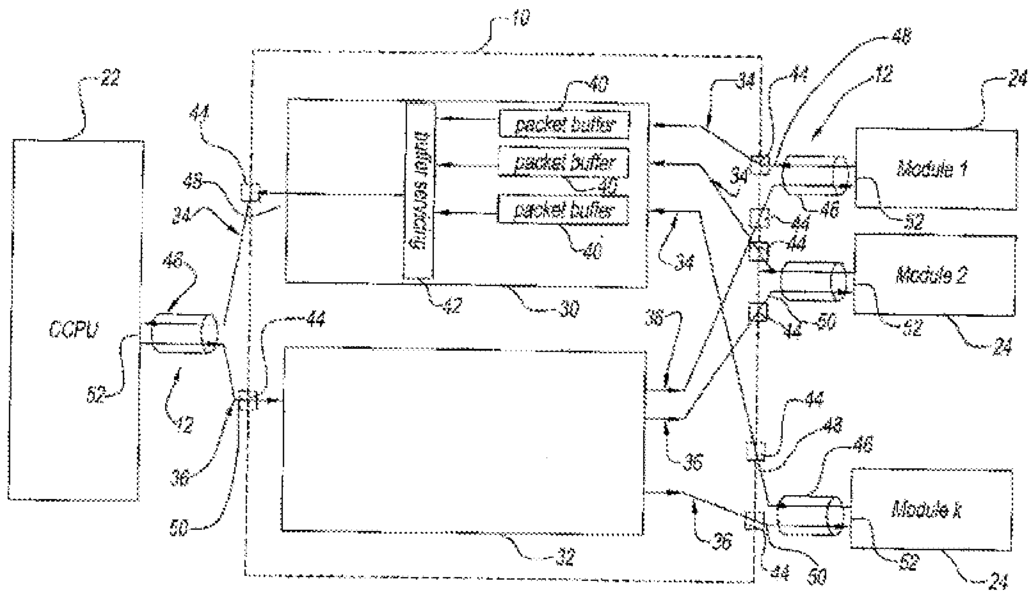
7. ***Argument.***

Independent Claim 1 recites:

> 1. A network communication device for bi-directional communication networks, comprising:
>
> a first portion communicably connectable to a first point and a second point on the bi-directional communication network, said first portion being configured to manage collisions among a first set of messages transmittable from said first point to said second point; and
>
> a second portion communicably connectable, in parallel with said first portion, to said first point and said second point, said second portion being configured to transmit free of collision management a second set of messages transmittable from said second point to said first point.

As an example of the above, the specification of the present application, in describing Fig. 4 (reproduced below), states that…

> In the exemplary embodiments of FIGS. 3 and 4, switch and hub portions 30, 32 are illustrated as separate analog and digital devices . . . device 10 is a bi-directional network communication device that transmits messages in a first direction in a first manner, but transmits messages in a second direction in a second manner.




*See* Fig. 4 and paragraphs [0025] and [0027] of the present application. As shown in Fig. 4 of the present application, messages (**34**) from the modules (**24**) to the CCPU (**22**) are transmitted via the switch portion (**30**) but not the hub portion (**32**), and messages (**36**) from the CCPU to the modules are transmitted via the hub portion but not the switch portion.

In rejecting Claim 1, the final Official Action of June 10, 2009 states that *Scott* discloses:

> a first portion (see Figure 5 reference numeral 172, switch module)

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> a second portion (see Figure 5 reference numeral 176, repeater module) communicably connectable, in parallel with the first portion (see Figure 5, switch module 172 is connected in parallel with repeater module 176), to the first point and the second point (see Figures 4 and 5, a first point corresponds to the second domain 16 and a second point corresponds to the first domain 14, where the first domain and second domain are interconnected via connector ports 154),

*See* p. 3 of the Official Action of June 10, 2009. However, Appellants respectfully submit that the combination of Figs. 4 and 5 of *Scott* does not disclose "a first portion communicably connectable to a first point and a second point and configured to manage collisions" and a "second portion connectable, in parallel with the first portion, to the first point and the second point, the second portion being configured to transmit free of collision management" as recited in independent Claim 1.

*Scott* is generally directed to an adaptive networking device including a switch module having several ports and operable according to a first protocol and a repeater module also having several ports and operable according to a second protocol." *See* Abstract of *Scott*. In describing Fig. 5, *Scott* states…

> Referring now to FIG. 5, a schematic diagram is shown of an adaptive networking device 152, which is implemented according to one embodiment of the adaptive networking device 151 of FIG. 4.

*See* col. 9, ll. 24-27 of *Scott*. As such, the device of Fig. 5 of *Scott* is an embodiment of the device of Fig. 4. Of the device of Fig. 4, *Scott* says…

> In one embodiment described herein, the switch domain 14 and the repeater domain 16 are independent, though the domains 14, 16 may be coupled externally for data transfer there-between. In another embodiment described herein, the domains 14 and 16 are internally coupled for enabling data transfer between the first domain 14 and the second domain 16.

*See* col. 9, ll. 17-23 of *Scott*. *Scott* then goes on to describe the embodiments illustrated in Figs. 5 and 6, and a holistic reading of *Scott* makes it clear that the above statement indicating that "the domains 14, 16 may be coupled externally for data transfer there-between. In another

embodiment described herein, the domains 14 and 16 are internally coupled for enabling data transfer between the first domain 14 and the second domain 16" is intended to apply to the devices of Figs. 5 and 6, respectively. Of the system of Fig. 5, *Scott* says…

> Data devices operating according to either the first domain 14 or the second domain 16 are coupled to the appropriate module 172 or 176, respectively, as described previously. Furthermore, devices in the first domain 14 operate in switch mode thereby significantly reducing extraneous traffic for the first domain 14. An external connection [can be included] between the first and second domains, such as with a bridge device or the like . . .

*See* col. 10, ll. 8-14 of *Scott*. Therefore, *Scott* discloses several embodiments, for which the first and second domains are either independent (as in Fig. 4), are coupled for external transfer (as in Fig. 5), or are internally coupled (as in Fig. 6, discussed further below). In each case, devices in one domain are associated with a specific switch or repeater module (172, 176).

The device of Fig. 5 operates such that "the domains 14, 16 may be coupled externally for data transfer there-between" via a "bridge device." The "bridge device" is discussed in more detail with respect to Fig. 2, about which *Scott* says…

> In the embodiment of FIG. 2, uplink ports 36 and bridge ports 38 are not switchable. Therefore, uplink port 36a and bridge port 38a communicate with first repeater module 62, and uplink port 36b and bridge port 38b communicate with second repeater module 64.

*See* col. 7, ll. 7-11 of *Scott*. *Scott* further describes the operation of the bridge device, saying…

> Bridge ports 38 couple devices in first domain 14 and devices in second domain 16 to bridge 40 and bridge 42, respectively . . . Bridges 40 and 42 allow data to be communicated between first domain 14 and second domain 16, as represented by link 44
>
> * * *
>
> Data device 18 in first domain 14 communicates data to data device 26 in second domain 16 using bridges 40 and 42. Data device 18 transmits data at a first rate to adaptive repeater 12. Adaptive repeater 12 retransmits the data received from data device 18 to other devices coupled to adaptive repeater 12 operating at the first rate, including bridge 40. Bridge 40 operating, at least in part, at the first rate re-transmits the data to bridge 42 using link 44. In bridge 40 or bridge 42, the data at the first rate is converted into data at a second rate, and bridge 42 re-transmits this data to port 38b of adaptive repeater 12. The data, now at the second rate, is then re-transmitted to the devices coupled to adaptive repeater 12 operating at the

second rate, including data device 26.

*See* col. 5, l. 19 – col. 6, l. 22 of *Scott*. Tracing the path of communications from the first domain to the second using the device of Fig. 5 of *Scott* as described above, and keeping in mind that the adaptive repeater (**12**, Fig. 2) includes a first repeater/switch module (**62** of Fig. 2 or **172** of Fig. 5) associated with a first domain/data rate and a second repeater/switch module (**64** of Fig. 2 or **176** of Fig. 5) associated with a second domain/data rate, one finds that messages from the first to the second domain traverse the following path: first domain data device (**18**) → switch/repeater module (**62, 172**) → bridge port (**38a**) → bridge (**40**) → link (**44**) → bridge (**42**) → bridge port (**38b**) → switch/repeater module (**64, 176**) → second domain data device (**26**). A communication from the second domain to the first domain would traverse the corresponding path.

The Advisory Action of August 28, 2009 responded to several of Appellants' remarks, which remarks were first provided in a response to the Official Action of June 10, 2009. The Advisory Action stated…

> . . . On page 4 of the Remarks, the Applicants further submit that Scott discloses the device of Fig. 5 operates such that "the domains 14, 16 may be coupled externally for data transfer there-between" via a "bridge device." Thus, the Applicants conclude that the bridge device mentioned in Scott is equivalent to bridge ports described in Fig. 2 of Scott. The Examiner respectfully disagrees . . . The bridge device that Scott describes in column 10 lines 13-14 is not the same as bridge ports described in Fig. 2 of Scott.
>
> Furthermore, The Applicants submit that messages traverse the following path: first domain data device (18) -> switch/repeater module (62,172)-> bridge port (38a) -> bridge (40) -> link (44) -> bridge (42) -> bridge port (38b) -> switch/repeater module (64,176) -> second domain data device (26). The Examiner respectfully disagrees. Again, the Applicants misunderstood the bridge device described in Scott to be bridge ports in Fig. 2 of Scott. Thus, the Applicants attempt to combine Fig. 2 and Fig. 5 of Scott together when there is no teaching in Scott about the combination. There is no bridge port described or shown in either Figure 4 or Figure 5 of Scott or the relevant portion in the specification.

*See*p. 2 of the Advisory Action of August 28, 2009. Appellants submit that a careful reading of *Scott* demonstrates the inaccuracy of the above statements.

First, regarding Figs. 1 and 2, *Scott* states that…

> Bridge ports 38 couple devices in first domain 14 and devices in second domain 16 to bridge 40 and bridge 42, respectively . . . Bridges 40 and 42 allow data to be communicated between first domain 14 and second domain 16, as represented by link 44.

*See* col. 5, ll. 51-61 of *Scott*. Therefore, *Scott* discloses that communication between the first and second domains must necessarily pass through the bridges **40** and **42**, which can be accessed

only by way of the bridge ports **38**.

*Scott* goes on to describe in more detail the communication process, stating that the…

> Data device 18 in first domain 14 communicates data to data device 26 in second domain 16 using bridges 40 and 42. Data device 18 transmits data at a first rate to adaptive repeater 12. Adaptive repeater 12 retransmits the data received from data device 18 to other devices coupled to adaptive repeater 12 operating at the first rate, including bridge 40. Bridge 40 operating, at least in part, at the first rate re-transmits the data to bridge 42 using link 44. In bridge 40 or bridge 42, the data at the first rate is converted into data at a second rate, and bridge 42 re-transmits this data to port 38b of adaptive repeater 12. The data, now at the second rate, is then re-transmitted to the devices coupled to adaptive repeater 12 operating at the second rate, including data device 26.

*See* col. 6, ll. 9-22 of *Scott*. As such, data being communicated from a device in the first domain to a device in the second domain is retransmitted by the repeater (**12**) to all of the devices in the first domain, as well as the bridge (**40**, by way of the bridge port **38a**). The bridge/bridge port are thus treated by the repeater essentially as a separate device in the first domain that receives retransmitted data along with all of the devices in the first domain.

Moving on, *Scott* says of Fig. 4…

> The adaptive networking device 151 [of FIG. 4] operates in a similar manner as the adaptive repeater 12 [of FIG. 2] for servicing data devices 18, 20, 22, etc. in the first domain 14 and data devices 26, 28, 30, etc. in a second domain 16.

*See* col. 7, l. 64 – col. 8, l. 3 of *Scott*. *Scott* then goes on to enumerate the specific difference between the adaptive networking device 151 of Fig. 4 and the adaptive repeater **12** of Fig. 2, stating that…

> The adaptive networking device 151 operates the first domain 14 in a switch mode rather than in a repeater mode as described above for the adaptive repeater 12 . . . The adaptive networking device 151 operates the second domain 16 in shared mode in the same manner as the adaptive repeater 12.

*See* col. 8, ll. 43-45 and col. 9, ll. 10-12 of *Scott*. *Scott* then continues by describing the communications procedure for the switch mode-operated first domain, stating…

> In [operating the first domain 14 in a switch mode rather than in a repeater mode], the adaptive networking device 151 examines source and destination media access

> control (MAC) addresses of each data packet received from data devices or networks 18, 20, 22, etc. in the first domain 14 and re-transmits the data packet to one or more of the other ports of the adaptive networking device 151. If a destination address is unknown, the data packet is broadcast to the remaining ports, if any, associated with the first domain 14. Eventually, the switch function "learns" the port associated with each destination address and sends the packet to the appropriate port. For example, data packets from the network 18 transmitted to the adaptive networking device 151 and intended for a data device in network 20 are re-transmitted by the adaptive networking device 151 to port P(n-2) and thus to the network 20 only. In contrast to the operation of the adaptive repeater 12, these data packets intended for the network 20 are not transmitted to any other port of the adaptive networking device 151. Multi-cast or broadcast packets intended for several data devices in the first domain 14 are sent only to ports coupled to the addressed data devices rather than to all other ports associated with the first domain 14. In this manner, the adaptive networking device 151 substantially enhances the performance of the first domain 14.

*See* col. 8, l. 45 – col. 9, l. 2 of *Scott*. To be clear, all of the above statements by *Scott* apply to communications between devices within the first domain (**14**). Because different points within the same domain of *Scott* are not communicably connected in parallel by the switch module (**172**) and the repeater module (**176**), these communications do not represent communications between a "first point" and a "second point" as recited in Claim 1 of the present application.

As mentioned earlier, *Scott* indicates that the adaptive networking device (**151**) of Fig. 4 differs from the adaptive repeater (**12**) of Fig. 2 in that one domain is operated in switch mode rather than all domains being operated in repeater mode. Based on the general statement in *Scott* that the "adaptive networking device 151 [of FIG. 4] operates in a similar manner as the adaptive repeater 12 [of FIG. 2]," it is clear that, aside from the aforementioned distinction, the adaptive networking device **151** of Fig. 4 operates in the same manner as the adaptive repeater **12** of Fig. 2, including generally precluding communications between the first and second domains, other than by way of a separate process specifically intended to support such intra-domain communications. This latter statement is confirmed by the following statement in *Scott*…

> Several specific embodiments the adaptive networking device 151 are described below. In one embodiment described herein, the switch domain 14 and the repeater domain 16 are independent, though the domains 14, 16 may be coupled externally for data transfer there-between. In another embodiment described herein, the domains 14 and 16 are internally coupled for enabling data transfer

between the first domain 14 and the second domain 16.

*See* col. 9, ll. 10-23 of *Scott*. *Scott* then immediately goes on to describe the embodiments depicted in Figs. 5 and 6, and it is clear that the references in the above passage to "one embodiment" and "another embodiment" are direct references to the embodiments of Figs. 5 and 6, respectively. Therefore, the embodiment depicted in Fig. 5 of *Scott* is understood to include a switch domain (**14**) and a repeater domain (**16**) that are "independent, though the domains . . . may be coupled externally for data transfer there-between." The "external coupling" would appear to be the bridges **40** and **42** and associated bridge ports **38** described with respect to Figs. 1 and 2,[1] as this is the only applicable teaching provided in *Scott* (the solution provided in Fig. 6 being the referenced "internal coupling").

Additionally, *Scott* makes clear that the first and second domains discussed therein are configured to operate at different rates. *See*, *e.g.*, col. 4, ll. 46-49 of *Scott*. Further, *Scott* indicates that when communicating between domains, the conversion of data from one rate to another is performed either by the converter of Fig. 6 (*see* col. 10, ll. 36-58 of *Scott*) or in the bridge (*see* col. 5, ll. 51-61 and col. 6, ll. 9-22 of *Scott*). As such, it is not clear how communications from one domain to the other could possibly proceed in the absence of both a converter and a bridge, as apparently alleged by the statement in the Advisory Action that "[t]here is no bridge port described or shown in either Figure 4 or Figure 5 of Scott or the relevant portion in the specification" (*see* p. 2 of the Advisory Action).

The Advisory Action of August 28, 2009 also states that

> , Scott discloses that data packets from the network 18 transmitted to the adaptive networking device 151 and intended for a data device in network 20 are re-transmitted by the adaptive networking device 151 to port P(n-2) and thus to the network 20 only. In contrast to the operation of the adaptive repeater 12, these data packets intended for the network 20 are not transmitted to any other port of the adaptive networking device 151 (see column 8 lines 56-63). Thus, Scott discloses that the adaptive repeater 12 in Fig. 2 operates differently from the adaptive networking device 151 in Fig. 5. If the data packets intended for network 20 are not transmitted to any other port of the adaptive network device 151, then the data packets are not transmitted to the repeater module 176 because the operation of the repeater module 176 is to re-transmit data sourced from any of the data devices connect to one port to all other ports associated with the second domain (see column 9 lines 12-15). According to the Applicants' Remarks, the data packets traverse through the switch module 172 first, and then the data packets are transmitted to the repeater module 176. If the data packets are forwarded to the repeater module 176 from the switch module 172, the repeater module 176 will perform its operation, which is to re-transmit data sourced from any of the data devices connect to one port to all other ports associated with the second domain (see column 9 lines 12-15). However, the statement contradicts with Scott's teaching because Scott teaches the switch module transmitting to port P(n-2) and thus to network 20 only. The messages transmitted from the switch module 172 do not traverse through the repeater module 176. Thus, the switch module 172 is connected in parallel with the repeater module 176.

*See* p. 2 of the Advisory Action. As mentioned above, communications between devices within

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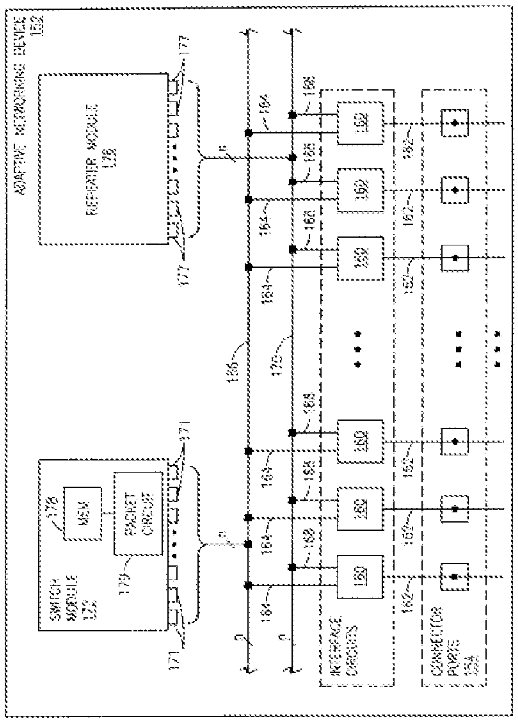
[1] It is noted that the bridges **40** and **42** are depicted in Fig. 1 as being external to the adaptive repeater **12**, further supporting the notion that references to "external couplings" for data transfer relate to a bridge (or the like).

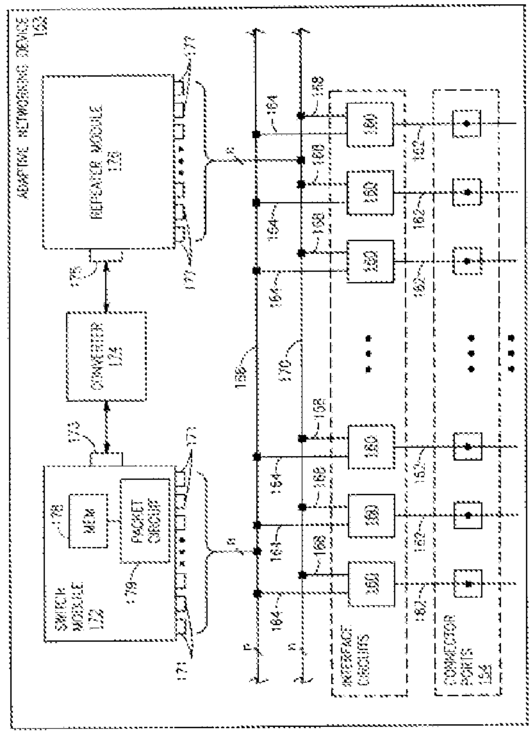
the same domain of *Scott* are not from a “first point” to a “second point” (or vice versa) as recited in Claim 1 of the present application. As such, the fact that communications within the first domain of *Scott* do not pass through the repeater module (**176**) is of no consequence. The Advisory Action appears to misunderstand that the argument provided by the Appellants referred explicitly to communications in *Scott* “from the first domain to the second.”

Appellants also note that the Official Action of June 10, 2009 compares the system of Fig. 5 of *Scott* with the system disclosed in Fig. 6 of *Scott*, stating…

> On March 17, 2008, the Examiner conducted an interview with the Applicant's attorney, Richard Emery. During the interview, the Examiner discussed the differences between Figure 4 of the application and Figure 6 of Scott et al. (USPN 5,953,340). The Examiner generally agreed that Figure 6 of Scott fails to disclose a network communication device having first and second portions that are respectively communicably connectable, *in parallel with one another*, to a first point and a second point on a bi-directional communication network.

*See* p. 2 of the Official Action of June 10, 2009. The Official Action immediately goes on to indicate that Fig. 5 of *Scott* remedies the deficiency noted in Fig. 6. However, Appellants cannot identify any difference between Fig. 5 and Fig. 6 of *Scott* that would support the assertion that *Scott* fails to disclose a parallel connection in Fig. 6, but discloses such a parallel connection in Fig. 5. Figs. 5 and 6 of *Scott* are reproduced below, side-by-side, in order to facilitate comparison.





The primary difference between the systems of Figs. 5 and 6 is the presence in the system of Fig. 6 of the "converter" (**174**) between the "switch module" (**172**) and the "repeater module" (**176**), which converter is absent from the system of Fig. 5. Appellants respectfully submit that the absence of the "converter" in Fig. 5 does not in any way result in the system of Fig. 5 of *Scott* disclosing "a first portion communicably connectable to a first point and a second point and configured to manage collisions" and a "second portion connectable, in parallel with the first portion, to the first point and the second point, the second portion being configured to transmit free of collision management" as recited by independent Claim 1.

Overall, it appears that any communication from one domain to another in *Scott* necessarily travels through each of the switch/repeater modules associated with each domain. Therefore, *Scott* does not disclose a device including "a first portion communicably connectable to a first point and a second point and configured to manage collisions" and a "second portion connectable, in parallel with said first portion, to said first point and said second point, said second portion being configured to transmit free of collision management," as recited by independent Claim 1.

Accordingly, for at least all of the reasons provided above, independent Claim 1 is patentable over *Scott*.

Similar to Claim 1, independent Claims 10 and 18 recite a communication device and a method of communicating on a communication network, respectively, that involve a hub portion and a switch portion communicatively connected in parallel to first and second points. Thus, independent Claims 10 and 18 are patentable over *Scott* for at least the same reasons given above for independent Claim 1. Claims 2-9, 11-17, 19, and 20 depend either directly or indirectly from respective ones of independent Claims 1, 10, and 18, and thus include all the recitations of their respective independent claims. Therefore, dependent Claims 2-9, 11-17, 19, and 20 are patentable for at least those reasons given above for independent Claims 1, 10, and 18.

Accordingly, in view of the all of the reasons given above, Appellants respectfully submit that the rejection of Claims 1-20 under 35 U.S.C. § 102(b) should be reversed.

8. ***Claims Appendix.***

The claims currently on appeal are as follows:

1. (previously presented) A network communication device for bi-directional communication networks, comprising:

a first portion communicably connectable to a first point and a second point on the bi-directional communication network, said first portion being configured to manage collisions among a first set of messages transmittable from said first point to said second point; and

a second portion communicably connectable, in parallel with said first portion, to said first point and said second point, said second portion being configured to transmit free of collision management a second set of messages transmittable from said second point to said first point.

2. (original) The network communication device as in claim 1, wherein said first and second messages are selected from the group consisting of electrical messages, optical messages, acoustic messages, and any combinations thereof.

3. (original) The network communication device as in claim 1, wherein said first portion is a network switch.

4. (original) The network communication device as in claim 3, wherein said network switch is an analog switch or a digital switch.

5. (original) The network communication device as in claim 1, wherein said second portion is a network hub.

6. (original) The network communication device as in claim 5, wherein said network hub is an analog hub or a digital hub.

7. (original) The network communication device as in claim 1, wherein said first and second portions are separate devices or a single device.

8. (original) The network communication device as in claim 1, further comprising a plurality of network connections for connecting said first and second portions to said first and second points.

9. (original) The network communication device as in claim 8, wherein said plurality of network connections are standardized Ethernet cable connections.

10. (previously presented) A bi-directional communication device comprising:

a hub portion;

a switch portion;

a first plurality of connections for communicably connecting said hub portion to a plurality of first points on a bi-directional communication network and to a second point on the bi-directional communication network; and

a second plurality of connections for communicably connecting, in parallel with said hub portion, said switch portion to said plurality of first points and to said second point.

11. (original) The bi-directional communication device as in claim 10, wherein said hub portion is configured to transmit first messages from said second point to said plurality of first points.

12. (original) The bi-directional communication device as in claim 11, wherein said hub portion is configured to transmit said first messages without collision management.

13. (original) The bi-directional communication device as in claim 10, wherein said switch portion is configured to transmit second messages from said plurality of first points to said second point.

14. (original) The bi-directional communication device as in claim 13, wherein said switch portion is configured to manage collisions among said second messages.

15. (original) The bi-directional communication device as in claim 10, wherein said network switch and said network hub are analog devices, digital devices, or any combination thereof.

16. (original) The bi-directional communication device as in claim 15, wherein said hub and switch portions are separate devices or a single device.

17. (original) The bi-directional communication device as in claim 10, wherein said first and second plurality of connections are standardized Ethernet cable connections.

18. (previously presented) A method of communicating messages on a bi-directional communication network, comprising:

transmitting a first message from each of a plurality of first points on the bi-directional communication network to a single second point on the bi-directional communication network through a switch portion of a communication device; and

transmitting a second message from said single second point to said plurality of first points through a hub portion of said communication device that is communicatively connected to the communication network in parallel with the switch portion.

19. (original) The method as in claim 18, wherein said switch and hub portions are analog devices, digital devices, or any combinations thereof.

20. (original) The method as in claim 19, wherein said switch and hub portions are separate devices or a unitary device.

9. ***Evidence Appendix.***

None.

10. ***Related Proceedings Appendix.***

None.

## CONCLUSION

For at least the foregoing reasons, Appellants respectfully request that the rejections be reversed.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 07-0868.

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